

Appl. No. 10/708,694
Amdt. dated December 2, 2004
Reply to Office action of September 07, 2004

Amendments to the Claims:

Listing of Claims:

5 Claim 1 (original) A three dimensional Triple Gate (Tri-gate) device comprising:

a composite fin structure consisting of a silicon germanium core and a strained silicon epitaxy layer grown from surface of said silicon germanium core;

10 a gate strip wrapping a portion of said composite fin structure, wherein portions of said composite fin structure not covered by said gate strip constitute source/drain regions of said Tri-gate device; and
a gate insulating layer interposed between said composite fin structure and said gate strip.

15 Claim 2 (original) The Tri-gate device of claim 1 wherein said composite fin structure has a substantially flat top surface and vertical sidewalls.

20 Claim 3 (original) The Tri-gate device of claim 2 wherein said composite fin structure has a width of said flat top surface that is approximately equal to its height.

25 Claim 4 (original) The Tri-gate device of claim 1 wherein said strained silicon epitaxy layer has a thickness of about 50~300 angstroms.

Claim 5 (original) The Tri-gate device of claim 1 wherein said gate strip is made of polysilicon or metal gate.

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Claim 6 (currently amended) A Tri-gate device comprising:

- 5 a composite fin structure consisting of a semiconductor core and a strained epitaxy layer grown from surface of said semiconductor core,
said semiconductor core having a first lattice constant that
mis-matches a second lattice constant of said strained epitaxy layer;
a gate strip wrapping a portion of said composite fin structure,
wherein portions of said composite fin structure not covered by said
gate strip constitute source/drain regions of said Tri-gate device; and
10 a gate insulating layer interposed between said composite fin
structure and said gate strip.

Claim 7 (cancelled)

- 15 Claim 8 (original) The Tri-gate device of claim 6 wherein said
semiconductor core consists of silicon germanium.

Claim 9 (original) The Tri-gate device of claim 6 wherein said strained
epitaxy layer is a strained silicon epitaxy layer.

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Claim 10 (original) The Tri-gate device of claim 9 wherein said strained
silicon epitaxy layer has thickness of about 50~300 angstroms.

Claim 11 (original) The Tri-gate device of claim 6 wherein said gate strip
25 is made of polysilicon or metal gate.